Annual Report of Operations for Year 2020

To comply with NPDES General Permit No. WAG130000 for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country within the Boundaries of the State of Washington

NPDES # for your Facility:
WAG-13-0017

Facility & Owner Information

Facility Name: Skookum Creek Hatchery	
Operator Name (Permittee): Lummi Indian Business Council	
Address: Physical Adress: 6498 Saxon Rd Acme, WA 98220	Lummi Indian Business Council 2665 Kwina Road Bellingham, WA 98226
Email: tomc@lummi-nsn.gov	Phone: 360-312-2320
Owner Name (if different from operator):	
Email:	Phone:

Best Management Practices (BMP) Plan

Has the BMP Plan been reviewed this year? ■ Yes ☐ No

Does the BMP Plan fulfill the requirements of the General Permit? ■ Yes ☐ No

Summarize any changes to the BMP Plan since the last annual report. Attach additional pages if necessary.

Operations and Production

Total harvestable weight produced in the past calendar year in pounds (lbs): 74,944

Pounds of food fed to fish during the maximum month: 10,780

List the species grown or held at your facility and the annual production of each in gross harvestable weight. If fish were released rather than harvested, list the weight at time of release.

Species	Fish Produced	Receiving Water(s) to which Fish were Released	Month Released/ Spawned
Chinook Salmon	961,107	South Fork Nooksack River	April and June
Coho Salmon	940,345	South Fork Nooksack River	May

Fill in the table below with production numbers from the past year. List the **maximum** amount of fish on-site and the maximum amount of food fed **per month**.

Month	Total Fish (lbs)	Fish Feed (lbs)	Month	Total Fish (lbs)	Fish Feed (lbs)
January	53,383	2,343	July	25,313	7,480
February	53,336	3,638	August	29,231	10,780
March	59,098	5,832	September	36,504	3,564
April	79,326	5,948	October	40,222	3,344
May	81,409	7,507	November	42,660	2,904
June	20,425	3,508	December	44,119	3,168

Additional Comments: Note on differences between total harvestable weight and monthly weights: The maximum pounds of fish for May, 2020 includes subyearling coho, which are not included in the total harvestable weight of 74,944 pounds because they will be released from the hatchery in 2021. In addition, a release of 66,146 of the 961,107subyearling chinook occurred in the middle of April, 2020.

Solid Waste Disposal

Describe the solid waste disposed of during the calendar year (including fish mortalities).

Type of Solid Disposed	Date Disposed	Location Disposed
Fecal Waste (from yearling pond drawdowns)	June	Sewage Treatment
Juvenile Mortalities	Daily (or as needed)	Septic System
Adult Carcasses	Weekly (August-December)	Crab bait, nutrient enhancement
Additional Comments:		

Fish Mortalities

Include a description and the dates of mass mortalities in the past year (more than 5% per week). Attach additional pages, if necessary. Include total mortalities from all causes.

Date	Cause of Deaths	Steps Taken to Correct Problem	Pounds of Fish
4/7 - 4/11	Bacterial Gill Disease (BGD)	Cease feeding, administer Chloramine-T as directed.	400
4/23 - 4/28	BGD	Cease feeding, administer $KMnO_3$ as directed.	1,250
Additional Comments:			

Noncompliance Summary

Include a description and the dates of noncompliance events (including spills), the reasons for the incidents, and the steps taken to correct the problems. Attach additional pages, if necessary.

No known noncompliance to report.

Inspections & Repairs for Production & Wastewater Treatment Systems

Date Inspected	Date Repaired	Description of System Inspected and/or Repaired
Monthly	N/A	Abatement system, vacuum systems, and waste drainlines
Weekly	N/A	Water delivery lines, fish ladder, pumps, filters, and valves

Aquaculture Drugs and Chemicals

Please indicate whether you used each drug/chemical **during the past calendar year**.
Describe the use of each drug/chemical in more detail on the following pages.

Used in the past year?	Drug or Chemical
☐ Yes ☒ No	Azithromycin
☒ Yes ☐ No	Chloramine-T: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Chlorine
☐ Yes ☒ No	Draxxin
☐ Yes ☒ No	Erythromycin - injectable
☐ Yes ☒ No	Erythromycin - medicated feed
☐ Yes ☒ No	Florfenicol (Aquaflor)
☐ Yes ☒ No	Formalin - 37% formaldehyde: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Herbicide - describe:
☐ Yes ☒ No	Hormone - describe:
☐ Yes ☒ No	Hydrogen Peroxide: ***See additional reporting requirements on page 7***
☒ Yes ☐ No	Iodine: ***See additional reporting requirements on page 7***
☐ Yes ☒ No	Oxytetracycline
☒ Yes ☐ No	Potassium Permanganate: ***See additional reporting requirements on page 7***
☒ Yes ☐ No	Romet
☐ Yes ☒ No	SLICE (emamectin benzoate)
☐ Yes ☒ No	Sodium Chloride - salt
☒ Yes ☐ No	Vibrio vaccine
☐ Yes ☐ No	Other:
☐ Yes ☐ No	Other:

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name:		Generic Name: Chloramine-T	
Reason for use: Treatment for bacterial gill disease			
☐ Preventative/Prophylactic ■ As-needed	Total quantity of formulated product per treatment (specify units):	Total quantity of formulated product used in past year (specify units):	
Date(s) of treatment: April 9 - 11, 2020			Total number of treatments in past year: 6
Maximum daily volume of treated water:	Treatment concentration (specify units): 12 ppm	Duration and frequency of treatment(s): 1 hour/pond/day for 3 consecutive days	
Method of application:	■ Static Bath ☐ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ☐ Incubation building	■ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: All treated water diverted to off-line settling basin (OLSB).			

Brand Name: Romet		Generic Name: Sulfadimethoxine, Ormetoprim	
Reason for use: For control of Enteric Redmouth Disease			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment: 2% BWD: 158.75 g	Total quantity of formulated product used in past year (specify units): 800 g	
Date(s) of treatment: April 20 - 25, 2020			Total number of treatments in past year: 5
Maximum daily volume of treated water: <300,000 L	Treatment concentration (specify units): 50 mg feed/kg fish	Duration and frequency of treatment(s): 5 days	
Method of application:	☐ Static Bath ☐ Flow-through	■ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	■ Raceways ☐ Incubation building	■ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	13,337 Liters
Desired Static Bath Treatment Concentration	12,000 µg/L
Volume of Product Needed	160.1 g Cl-T in 18.93 L H2O Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0 ppm, all effluent sent to OLSB Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	4,395,231 GPD Specify Units
Maximum % of Facility Discharge Treated	0 % of Total Discharge

Flow-Through Treatments	
Tank Volume	Liters
Calculated Flow Rate	Liters/Minute
Duration of Treatment	Minutes
Desired Flow-Through Treatment Concentration of Product	µg/L
Amount of Product to Add Initially	Liters Product
Amount of Product to Add During Treatment	mL/Minute
Total Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Ovadine		Generic Name: Buffered PVP Iodine (1%)	
Reason for use: Control and prevention of *Saprolegnia*			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment (specify units):	Total quantity of formulated product used in past year (specify units): 45 gallons	
Date(s) of treatment: Mid-September to early December daily			Total number of treatments in past year: Approximately 60
Maximum daily volume of treated water: <3,000 liters per day	Treatment concentration (specify units): 100ppm	Duration and frequency of treatment(s): Duration of 10 minutes twice per day	
Method of application:	☐ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Brand Name: N/A		Generic Name: *Vibrio* vaccine	
Reason for use: Prevention of vibriosis caused by *Vibrio anguilarum*			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment: 1 quart	Total quantity of formulated product used in past year (specify units): 4 gallons	
Date(s) of treatment: March 15-18, 2020			Total number of treatments in past year: 16
Maximum daily volume of treated water: Approx. 25 gallons	Treatment concentration (specify units): 1:100 dilution	Duration and frequency of treatment(s): 30 second bath for 200k fish at tagging	
Method of application:	■ Static Bath ☐ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ☐ Incubation building	☐ Ponds ☐ Off-line settling basin	■ Other (describe): Used in 30 gallon tub
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: Vaccine static bath water is discharged to the offline settling basin after use.			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Flow-Through Treatments	
Tank Volume	267.4 or 9.46 Liters
Calculated Flow Rate	34 or 15 Liters/Minute
Duration of Treatment	10 Minutes
Desired Flow-Through Treatment Concentration of Product	10,000 µg/L
Amount of Product to Add Initially	0.2L or 0.1L (per incubator) Liters Product
Amount of Product to Add During Treatment	200mL or 100mL mL/Minute
Total Volume of Product Needed	0.2L or 0.1L per incubator Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.47ppb Active Ingredient: 0.0047ppb of iodine Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	16,637,760 liters Specify Units
Maximum % of Facility Discharge Treated	1.25% % of Total Discharge

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Potassium Permanganate		Generic Name: $KMnO_4$	
Reason for use: Control and prevention of bacterial gill disease			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment (specify units):	Total quantity of formulated product used in past year (specify units): 2.7 lbs	
Date(s) of treatment: 4/25/2020- 4/28/2020			Total number of treatments in past year: 5
Maximum daily volume of treated water: 278,775 L	Treatment concentration (specify units): < 2 ppm	Duration and frequency of treatment(s): 1 hour, once per day	
Method of application:	☐ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ☐ Incubation building	■ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	■ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Brand Name:		Generic Name:	
Reason for use:			
☐ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment:	Total quantity of formulated product used in past year (specify units):	
Date(s) of treatment:			Total number of treatments in past year:
Maximum daily volume of treated water:	Treatment concentration (specify units):	Duration and frequency of treatment(s):	
Method of application:	☐ Static Bath ☐ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ☐ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Flow-Through Treatments	
Tank Volume	278,775 Liters
Calculated Flow Rate	2,271 Liters/Minute
Duration of Treatment	60 Minutes
Desired Flow-Through Treatment Concentration of Product	≤ 2,000 µg/L
Amount of Product to Add Initially	0 Liters Product
Amount of Product to Add During Treatment	4,550 mL/Minute
Total Volume of Product Needed	1,227 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 134 LPM Active Ingredient: 14.9 ppb Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	16,637,760 L Specify Units
Maximum % of Facility Discharge Treated	0.83 % of Total Discharge

Changes to the Facility or Operations

Describe any changes to the facility or operations since the last annual report.
No reportable changes to facility or operations for 2020.

Signature and Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly evaluate and gather the information submitted. Based on my inquiry of the person or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed name of person signing	Title
Thomas M. Chance	Salmon Enhancement Program Manager
Applicant Signature	Date Signed 1/19/2021

Submittal Information

Send the complete, signed information, along with any attachments, to the following address:

U.S. EPA Region 10, OWW-191

Washington Hatchery Annual Report

1200 Sixth Avenue, Suite 900

Seattle, WA 98101-3140